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Prepared for the Silver Tsunami? An Examination of Municipal Old-Age Dependency and Age-Friendly Policy in Ontario, Canada

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Abstract

In many countries, the proportion of older adults (over 65 years of age) is increasing. Such changes in population challenge the viability of economic systems, as older citizens are dependent on a smaller working population. The World Health Organization developed the age-friendly cities framework and corresponding certification system to encourage local municipalities to develop their own policies to support their aging population. This paper explores the relationship between population aging in individual municipalities and the policy response (or lack thereof) in Ontario, Canada. Our demographic analysis found that old-age dependency is expected to rise in every Ontario municipality, regardless of size. Small municipalities are expected to experience the most severe increases in old-age dependency and are least likely to have started any community level planning for older adults. In addition to the demographic and policy analysis, we outline recommendations on how to encourage municipalities to support their aging populations.

Introduction

In Canada, the rising national median age and its resulting issues are well known to academics, practitioners and to the general public. Birth rates across the country have remained, predominantly, below the replacement rate, while the mobility of younger educated adults has resulted in a rise of select migration away from smaller, peripheral towns (Townshend & Walker, 2015). Such changes in population challenge the viability of economic systems, as older citizens are dependent on a smaller working population (Nefs et al., 2013). As of September 2015, Canadians aged 65 and older officially outnumbered those under age 15 (Statistics Canada, 2015). The aging of the population has called into question how prepared the national, provincial and local governments are to support the needs of such a heterogeneous population. While national and provincial level planning on macro level issues like pensions and healthcare are commonplace, these debates neglect how policies play out on the ground in the complex and varied regional milieu of a large nation like Canada (Hodge, 2008). Hodge (2008) argues that one has to go beyond counting heads to understanding the lived experiences of older adults in their local communities and how local policies respond to their contextualized needs in order to truly “deal with the implications of population aging,” (p.3). However, prior to examining how well policy responds to the experiences of older adults, we need to first establish a baseline of existing local policy-making activities. This paper establishes that baseline and contributes to the aging discourse by determining the magnitude of the aging phenomenon in Ontario municipalities and if, and to what extent, local governments have answered the call for planning for older adults.

The importance of the local environment is reflected in the overwhelming desire of older adults to maintain their independence as they age, often expressed as the desire to ‘age-in-place’ (Hodge, 2008). As people age, they are increasingly likely to experience some kind of impairment (physical, sensory or cognitive) or reduced mobility. Researchers note that an aging individual’s conceptual world shrinks due

to limited mobility, decreasing physical and cognitive abilities, and perceived psychological factors (A. M. Myers, Cyarto, & Blanchard, 2005). Theoretically, this reduced ability means that an individual is more likely to be impacted by barriers in their local environment (Lawton, 1982). Further research has confirmed that impacts affecting older adults' independence, sense of dignity and overall quality of life often manifest at the community level (Plouffe & Kalache, 2010; Thomas & Blanchard, 2009). Therefore, it follows that the local community becomes an ideal space for intervention. This has been reflected in the World Health Organization's (WHO) policy push for "age-friendly cities" (AFC). The aim of the WHO is to facilitate the inclusion of older persons by developing an age-friendly world:

An age-friendly world enables people of all ages to actively participate in community activities and treats everyone with respect, regardless of their age. It is a place that makes it easy for older people to stay connected to people that are important to them. And it helps people stay healthy and active even at the oldest ages and provides appropriate support to those who can no longer look after themselves. (World Health Organization, 2017)

The WHO recognizes that, as we grow older, our physical and relational environment plays an even more significant role in our quality of life. In fact, 70% of our aging process is determined by external factors, as research has shown that genetic factors account for less than 30% (Vaupel, Carey, & Christensen, 2003; Wahl & Oswald, 2010). Thus, the WHO developed a framework and corresponding certification system to encourage local municipalities to develop their own policies to support their aging population. The WHO's AFC designation encourages municipalities to conduct age-friendliness audits according to their framework, consult with older adults to build a local, context-specific action plan.

The AFC movement is a global policy framework that has been locally applied to cities throughout the world since its inception in 2007. While a promising policy movement that has the potential to create a context specific response to increasing proportions of older adults in communities, there has been limited research evaluating the effectiveness of this policy intervention in the Canadian context. There have been systematic reviews of the AFC policy uptake in Manitoba (Menec et al., 2015; Menec, Novek, Veselyuk, & McArthur, 2014), qualitative reviews in the same province (Novek & Menec, 2014; Spina & Menec, 2015) and a case study review of two municipalities in Québec (Garon, Paris, Beaulieu, Veil, & Laliberte, 2014). In addition, Plouffe et al. (2012) argue that the Age-Friendly City initiative in Canada has been successful, with the Public Health Agency of Canada playing a large role in that success. While AFC policies should be considered a step in the right direction, at the time of publication of Plouffe et al.'s (2012) article, there had been no evaluations of age-friendly initiatives (Keady et al., 2012; Keating & Gaudet, 2012). Furthermore, there has been no systematic review of AFC policy uptake in Ontario municipalities, and only two empirical evaluative studies of the effectiveness of the policy as an intervention in North America (Williams-Roberts, Jeffery, Johnson, & Muhajarine, 2016). It is also important to note that no study to date has examined municipality-specific levels of vulnerability with the presence of AFC policies.

This paper aims to address that gap by exploring the relationship between population aging in individual municipalities and the policy response (or lack thereof). More specifically, we seek to determine where age-friendly policies are most needed in Ontario, and to understand how, and if, Ontario municipalities are taking up this global policy framework. The three objectives of this paper are to (1) gauge the old-age dependency of Ontario municipalities using population projections, (2) assess the preparedness of Ontario municipalities by determining if age-friendly policies have been created, and their

extent, and (3) explore the impact of this global policy movement on individual small, mid and large Ontario municipalities.

It is important to note that the AFC model has been critiqued for representing a homogenized approach to policy making, lacking evaluative and contextual research, and failing to recognize the relationship between the AFC model and larger economic processes (Lui, Everingham, Warburton, Cuthill, & Bartlett, 2009; Phillipson, 2011; Williams-Roberts et al., 2016). Despite its shortcomings, the AFC model is still widely used across the world. While we acknowledge that there may be better models, our main interest is the preparedness of communities, which we gauge through policy and planning initiatives. Therefore, it is important to include AFC policies due to the prevalence of the AFC model. This study provides much needed empirical analysis that will help advance age-friendly policy research – including critiques and improvements to the AFC model. Furthermore, this study provides a foundation for future research exploring the effectiveness and evaluation of age-friendly policy. By developing a more robust understanding of the influence of the global AFC framework, we can better understand its impact on the lives of older adults in local communities in Ontario, and around the world.

Literature Review

Aging as a Population Trend?

Population aging and urbanization are the two biggest social trends affecting the world today (Burdett & Sudjic, 2008). The population group of older adults is more heterogeneous than any other group, making it a difficult issue to address with government policy. Older adults are often separated into three age categories: the old (65-74 years of age), the old-old (75-84 years of age) and the very old (85+). This categorization helps give a better idea of the vulnerability of a particular community. With a greater percentage of ‘very old’, a community is likely to require more services or support (Hodge, 2008). That

being said, there are many factors that influence the quality of life of older individuals. Overwhelmingly, the quality of life of older adults is characterized by the ability to maintain independence while aging (Hodge, 2008). The widely adopted press-congruence model states that an individual's quality of life is dependent upon the interplay between their environment (the press) and their personal ability to cope with that environment (congruence) (Lawton & Nahemow, 1973). Occupational therapists added a third component to this model – task related behaviors or activities (Carlsson, 2002; Scheidt & Windley, 2006). Thus, ideal combination for living well as we age is a combination of individual factors (such as income, health status, housing) and community level factors (such as access to transportation, community supports and housing) that come together in supporting people in everyday activities.

Community-level factors can be the difference between enabling and disabling an older adult, by either lessening the environmental press or increasing it. For example, an older adult loses their driver's license. If that older adult lives somewhere where they can still walk to get groceries or visit friends, the environmental press on them is lessened, as they are still able to continue their activities despite losing the ability to drive. If that older adult lives in a location that has poor public transport access and nothing within walking distance, the environmental press is strong, affecting their ability to easily go about their daily activities.

Since older adults in general spend far more time at home than working-age adults, it is vitally important to ensure that their homes, and neighborhoods are built in a way that supports them and their independence (Kerr, Rosenberg, & Frank, 2012). Continuance of activities, like shopping, visiting the doctor, seeing friends, volunteering, and participating in civic duties are integral to independence and a sense of purpose in life. However, continuance of, and access to, these activities can depend on local government policy. Research on the social determinants of health has shown that a sense of independence can have a strong influence on a person's health outcomes (Wilkinson & Marmot, 2003). In response to

the desire to maintain independence and ‘age-in-community’, as well as the perceived health benefits of doing so, the WHO began a policy movement to guide local municipalities.

The AFC movement began in the 1990s with the World Health Organization promoting ‘active aging’. Active aging advocates for improved quality of life for older adults and their right to continue to participate in society in a multitude of ways - culturally, socially, spiritually, economically and civically (Buffel, Phillipson, & Scharf, 2012). After hosting focus groups in 33 developed and developing cities across the world in the early 2000s, the WHO came up with a framework for assessing age-friendliness, known as the Vancouver protocol. They outlined nine major areas of focus for municipalities - outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, and community support and health services, and created an 88-point checklist (Plouffe & Kalache, 2010). Municipalities were encouraged to conduct their own age-friendly audit, host public meetings with older adults, develop a plan that encompasses the nine areas, and finally, set targets and evaluation mechanisms for the plan. While it is unknown as to how context-specific these age-friendly audits are, there is at least an attempt to understand contextual factors of diverse local communities. However, this effort to understand local context was still critically received by scholars for being overly homogenous (Buffel et al., 2012; Scheidt & Windley, 2006).

Before developing, implementing or evaluating age-friendly policy, details about future demographics are needed (Hodge, 2008). Hodge (2008) argues that in order to plan effectively, we need to know not only the projected number of seniors, but also the age structure of the senior cohort. The distribution of seniors by group (old, old-old and very old) is a good indicator of the “different contexts of life experiences of seniors that might affect the geographical scope and level of participation in community activities,” (Hodge, 2008, p. 255). In addition, the ‘very old’ group is most likely to experience

some kind of sensory, mobility or cognitive disability. Furthermore, they are less likely to live with full independence unless community supports are in place. Reliable population projections are key to understanding the contextual vulnerability of different municipalities and whether or not they have begun planning for an aging population.

Population Projections

Population projections, at all levels of government, are needed to gauge future vulnerabilities and appropriately inform decisions (Wilson and Rees, 2005). Yet some feel that planners undervalue, or even disregard, demographic projections (D. Myers, 2001). Although population projections are crucial to policymaking, the neglect from decision-makers may be due to other constraints, such as timeliness, cost of production, and difficulty of explanation (Rayer & Smith, 2010; Smith, Tayman, & Swanson, 2001; Wilson, 2014). Due to the high degree of precision of projections, readers can acquire a false sense of assurance (Swanson & Tayman, 1995). This can result in controversy and criticism when projected change does not comply with expectations or development plans (Wilson & Rowe, 2011). Therefore, when using population projections to inform planning decisions, it is important to stress utility, rather than accuracy or precision. Population projections are not meant to be considered specific predictions, but rather to provide indicators of likely future impacts (D. Myers, 2001). The emphasis on utility is especially important for long-term projections, as accuracy diminishes with the length of projection period (Goldstein & Stecklov, 2002; Keilman, 2008). Population size also plays a role, as accuracy is greater for areas with large populations (Wilson & Rowe, 2011). That being said, municipalities with small populations do need projections to make decisions and many of these decisions do have long-term impacts. Population projections can influence school and hospital capacity, protection services, utilities, public transportation, recreational facilities, future housing and commercial development, and much more.

Overestimated projections can lead to misallocated resources and excess capacity, underutilized infrastructure and overstaffing (Davis, 1995). Alternatively, underestimated projections may result in overextended public facilities and infrastructure, and in response, costly expansion programs and overtime (Davis, 1995).

There is an abundance of literature concerning the accuracy of population projections for large-scale geographical areas. However, relatively little academic discourse has been dedicated to smaller scale areas such as individual cities or towns (Rayer & Smith, 2010; Wilson, 2014). This is partially due to the fact that projection error, regardless of method, is probable to remain quite substantial at the local scale (Wilson & Rowe, 2011). There is little guidance from the academic literature and a lack of consensus on best methodological practices for projections for smaller population areas (Wilson, 2014). As expected, complex models are advantageous as they provide more detail. However, these models are time-consuming, expensive and difficult to calculate. In contrast, simpler models are easily applied but lack the depth of analysis. Often a significant difference between the simpler and more complex methods is the inclusion (or lack) of an internal migration component. Many researchers have concluded that at the local scale, due to the high projection error, complex models are no more accurate than simpler alternatives (Chi, 2009; Rayer, 2008; Rayer & Smith, 2010; Smith & Tayman, 2003; Wilson & Rees, 2005). A small number of studies have examined the applicability of different models in smaller areas. Hartt and Woudsma (2014) examined four projection models used at multiple jurisdictional levels in the Canadian context across nine evaluation criteria: (1) accuracy, (2) cost, (3) time, (4) ease of application, (5) ease of explanation, (6) geographic detail, (7) demographic detail, (8) temporal detail, and (9) usefulness for scenarios. They concluded that the share-capture model, which assumes that the local municipal share of a surrounding region's population will remain consistently proportional into the future, was most appropriate at the local scale.

Similarly, in an examination of census tracts in the United States, Smith and Shahidullah (1995) concluded that of four models, the lowest errors were generated by a share capture model. In a study of Dutch municipalities, Openshaw and van der Knapp (1983) determined that of 66 different projection models, the ratio correction model (a form of share capture) was one of the best. Rayer and Smith's (2010) study of sub county areas in Florida found that linear extrapolation performed best, although share capture models also performed very well. Wilson (2014) assessed 10 models using datasets from Australia, New Zealand and the United Kingdom and concluded that, once again, share capture models outperformed the other alternatives.

Methods

The objectives of this study were to (1) gauge the old-age dependency of Ontario municipalities, (2) assess the preparedness of Ontario municipalities, and (3) explore the impact of the age-friendly policy movement on Ontario municipalities. In order to do so, we followed a two-part methodology. First, we examined the current and projected demographic profiles of all Ontario municipalities using population estimates and projections. Second, we examine and analyze age-friendly policies across Ontario. As our study is focused at the local level in Ontario, we included all 159 Ontario municipalities with population over 10,000.

Population Projections and Old-Age Dependency

Research has shown that, due to the volatility of local level migratory trends, the share capture model is often as accurate as more sophisticated modeling approaches at the local level (Openshaw & van der Knapp, 1983; Smith & Shahidullah, 1995; Wilson, 2014). The method is built on the assumption that local level demographic change is closely related to changes in the surrounding region. The share capture

method uses surrounding region projections and assumes that growth and decline at the local level will be proportional to the encompassing region. At the most basic level, this method can be used to project the local population as a whole. For example, if the surrounding region's population is projected to grow by 20%, the share capture model will project the local population to also grow by 20%. Mathematically, the share capture method can be expressed as:

$$P_{L,t+1} = P_{L,t} * \left(\frac{P_{S,t+1}}{P_{S,t}} \right)$$

where $P_{L,t+1}$ is the population projection for the local area (L) in the target year; $P_{L,t}$ is the population of the local area in the launch year; $P_{S,t+1}$ is the population projection of the surrounding region (S) in the target year; and $P_{S,t}$ is the population of the surrounding region in the launch year.

If the surrounding region's projections include age-specific detail, then age-specific projections can also be calculated for the local population. Like the cohort-component method, age group cohorts progress through the model based on the assumption that cohort-specific fertility, migration and mortality rates are comparable at both geographic levels. Capturing the proportional growth or decline of each age cohort is particularly useful for calculating the working age population, as the migratory movements of this age cohort are especially difficult to predict at the local level.

Using 2013 population estimates as a base, we calculated five-year age cohort projections up to the year 2036. As the share capture method is only possible with available projections for the surrounding region, the analysis relied upon existing population projections acquired from the Ontario Ministry of Finance (2013). The Ontario Ministry of Finance produces population projections for every census division¹ in Ontario using the cohort-component method². Using the share capture method and the census

¹ Statistics Canada defines a census division as a “group of neighboring municipalities joined together for the purposes of regional planning and managing common services” (Statistics Canada, 2016).

² For full methodological details see Ontario Ministry of Finance, 2013.

division projections from the Ontario Ministry of Finance, we calculated cohort-based population projections for 159 communities. Using the results from the population projections, we calculated the senior, old, old-old and very old dependency ratios for each municipality.

After calculating the population projections, we then used those figures to calculate dependency ratios. Dependency ratios measure the number of older people (aged 65 and above) and young people (aged 0 to 14) per 100 persons of working age (between 25 and 64). Traditionally, the working age population has been defined as those aged 15 to 64. However, in recent practice the age range is being adjusted to exclude young adults aged 15 to 24 (Davies, 2015). This reflects the fact that in advance economies, most people under 25 are in training or apprentice programs. As Canada's aging population is our primary focus, the dependency ratio only tells part of the story. Therefore, we used a refined version of the dependency ratio, the senior dependency ratio, to measure the potential aging of municipalities. The senior dependency ratio measures the number of older people (aged 65 and above) per 100 persons of working age (between 25 and 64). Following Hodge (2008), we further refined the dependency ratio further to examine the extent of the old (65-74), old-old (75-84) and very old (85+) populations.

Planning for Aging

The second phase of this study was to gauge how prepared municipalities were for an aging population. We developed a four part typology in order to assess the local planning and policy initiatives: (1) "no planning", in which no age-friendly policies or plans were found; (2) "higher level", in which policy was found at a governmental level higher than the municipality (county, region, etc.); (3) "some planning", in which cities had some, mostly informal, initiatives that were not recognized by the World Health Organization (WHO); (4) "WHO", in which a community was designated age-friendly by the WHO; and (5) "ON Grant", in which a municipality or non-governmental organization has received a

grant from the provincial government to conduct an age-friendly project. In addition to noting the level and type of planning, we recorded the involvement of external organizations such as the United Way or a local/regional Council on Aging (NGO). We also documented any grants awarded and the type, amount and funding organization.

In order to find local public and private age-friendly initiatives, we followed a systematic data mining approach. We first searched for each Ontario community in the AFC Community Planning Grant database and the AFC Database from the Seniors Health Knowledge Network. We also did a general Google search combining “age-friendly” and each individual city’s name. This allowed us to discover, and then trace, other media sources (i.e. newspaper and magazine articles) as well as academic studies and private initiative reports. If any of the cities were listed in the aforementioned databases or if the Google search returned any initiatives, we then searched the WHO’s Global Network for Age-Friendly Cities and Communities to see if they were listed as certified.

Results

The results show that every single one of the 159 municipalities is expected to experience an increase in senior dependency. For municipalities in Ontario, the projected overall senior dependency ratio is 65.5. Table 1 provides descriptive statistics for the 2013 senior dependency ratio estimates and the 2036 projections. In order to better understand the relationship between municipalities and dependency, we examined the results by population size. Following Seasons (2003), we stratified the results by municipal population size: small (10,000-50,000), mid (50,000-500,000) and large (500,000+). This approach takes into account Canada’s uneven urban system (few large cities, many small and mid-sized) and allows for a more targeted context-specific analysis. From Table 1 we can see that the majority of the cities in Ontario can be classified as “small” and that the small cities have the highest mean 2013 and 2036 senior

dependency ratios. Furthermore, small cities also have the highest projected change in average senior dependency. On average, senior dependency ratios appear to have a negative relationship with population size. The largest cities had the smallest dependency and vice versa. However, the correlation between senior dependency and population size is not significant. It is worth noting that in all city size categories, the projected percent change of senior dependency is approaching 100%.

Table 1: Descriptive statistics for 2013 and 2036 Ontario municipal senior dependency ratios, stratified by city size.

	N	2013 Senior Dependency Ratio				2036 Senior Dependency Ratio				Mean 65+ Dep. % Change
		Mean	SD	Min	Max	Mean	SD	Min	Max	
All Cities	159	32.9	9.9	13.6	78.7	65.5	21.7	21.8	152.1	99
Small	118	34.8	10.0	13.7	78.7	70.6	21.8	25.0	152.1	103
Mid	36	27.9	7.4	13.6	42.2	53.1	14.7	21.8	86.6	90
Large	5	23.3	4.4	17.3	29.2	41.9	6.5	33.6	51.5	80

Note: City size categorization follows Seasons (2003), where small cities are defined as having a population of 10,000 to 50,000; midsized cities a population of 50,000 to 500,000; and large cities have a population greater than 500,000.

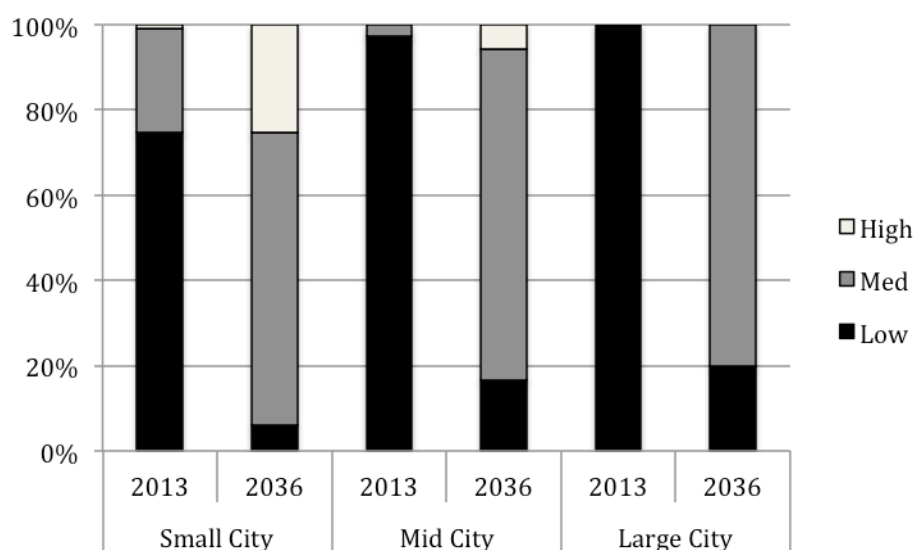
The lack of significant correlation between senior dependency ratio and city size demonstrates that there is variability within each city size categorization. In order to better understand the propagation of dependency, we stratified the results by intensity of senior dependency ratio: low (0-33), medium (34-66), and high (67+). In 2013, the majority of the cities have low intensity dependency (Table 2). However, comparing 2013 and 2036, there is a huge shift towards high intensity dependency. The number of low intensity cities changed from 84 (2013) to 4 (2036). High intensity cities changed from 1 (2013) to 74 (2036).

Table 2: Number of Ontario cities with low, medium and high senior dependency intensity in 2013 and 2036.

Senior Dependency Ratio Intensity	Number of Cities	
	2013	2036
Low	84	4
Medium	74	81
High	1	74

Note: Low, medium and high intensity cities are defined as having senior dependency ratios of 0 to 33, 34 to 66 and 67+, respectively.

Figure 1 summarizes and compares the senior dependency ratio of Ontario cities by size and intensity. The majority of the cities in 2013 are of low intensity. However, there is a pronounced shift to medium and high intensity in small, mid and large cities. Within the mid and large categories, the proportion of low intensity cities drops more than 90%. In fact, according to the 2036 projections, there will remain almost no low intensity cities. The majority of the cities in 2036 are expected to have medium or high intensity senior dependency ratios. The bulk of the high intensity cases are small cities.

Figure 1: Proportion of Ontario cities with low, medium and high senior dependency intensity^a in 2013 and 2036 by city size^b.

Note: ^a Low, medium and high intensity cities are defined as having senior dependency ratios of 0 to 33, 34 to 66 and 67+, respectively.

^b City size categorization follows Seasons (2003), where small cities are defined as having a population of 10,000 to 50,000; mid-sized cities a population of 50,000 to 500,000; and large cities have a population greater than 500,000.

Following Hodge (2008), we broke down the 65+ age group further in order to get a better understanding of the distribution of the aging population. On average in 2013, the old (65-74), old-old (75-84) and very old (85+) made up 10%, 6% and 2% of Ontario cities, respectively. According to our projections, by 2036, those figures will change to 13%, 11% and 5%. However, proportions only tell part of the story. Once again, we turn to dependency ratios to better gauge the potential impact of the population aging. The senior dependency ratio can be broken down into old, old-old and very old dependency. Table 3 summarizes the partitioned dependency ratios by city size for 2013 and 2036. As expected, the ratios decrease as the age of the cohort increases. In every age category in both years, there is a negative relationship between city size and dependency. Small cities, on average, have the highest old, old-old and very old dependency ratios. It is also important to note the enormous increase of dependency, across the board, between 2013 and 2036. The most pronounced changes are between the old-old and very old cohorts.

Table 3: 2013 and 2036 Ontario municipal old, old-old and very old^a average dependency ratios stratified by city size².

City Size	2013 Average Dependency Ratios			2036 Average Dependency Ratios		
	Old	Old-Old	Very Old	Old	Old-Old	Very Old
All Cities	18.1	10.6	4.2	29.4	24.9	11.2
Small	19.3	11.2	4.4	31.7	26.8	12.0
Mid	14.9	9.2	3.8	23.5	20.4	9.2
Large	12.9	7.2	3.2	20.4	14.7	6.8

Note: ^a Old age categorization follows Hodge (2008), where old includes ages 65 to 74; old old includes ages 75 to 84; and very old includes all ages over 85.

^b City size categorization follows Seasons (2003), where small cities are defined as having a population of 10,000 to 50,000; mid-sized cities a population of 50,000 to 500,000; and large cities have a population greater than 500,000.

Turning to the examination of policy, Table 4 highlights the prevalence of age-friendly policy in Ontario cities. The policy results are organized into five categories: (1) “no planning”, (2) “higher level”, in which policy was found at a governmental level higher than the municipality, (3) “some planning”, in

which cities had some, mostly informal, initiatives, (4) “WHO”, in which a community was designated age-friendly by the WHO, and (5) “ON Grant”, in which a municipality or non-governmental organization has received a grant from the provincial government to conduct an age-friendly project. It is important to note that the categorizations are not mutually exclusive. Only cities falling in the “no planning” category are by definition exempt from the other categories. The table details the results for all the cities, as well as stratified by city size and dependency intensity.

Table 4: Number and proportion of Ontario cities with no age-friendly planning, age-friendly planning at a higher governmental level, some municipal age-friendly planning, WHO age-friendly designation, and provincial funding for age-friendly planning. Cities stratified by size^a and dependency intensity^b.

	N	No Planning		Higher Level		Some Planning		WHO		ON Grant	
		#	%	#	%	#	%	#	%	#	%
All Cities	159	54	34	61	38	53	33	7	4	30	19
Small City	118	50	42	44	37	28	24	0	0	20	17
Mid City	36	4	11	15	42	23	64	5	14	6	17
Large City	5	0	0	3	60	2	40	2	40	4	80
Low Intensity	4	0	0	3	75	3	75	0	0	1	25
Med Intensity	81	26	32	35	43	25	31	6	7	13	16
High Intensity	74	28	38	23	31	25	34	1	1	16	22

Note: ^a City size categorization follows Seasons (2003), where small cities are defined as having a population of 10,000 to 50,000; midsize cities a population of 50,000 to 500,000; and large cities have a population greater than 500,000.

^b Low, medium and high intensity cities are defined as having senior dependency ratios of 0 to 33, 34 to 66 and 67+, respectively.

Looking at all of the cities in Ontario, we found that 34% had no age-friendly planning whatsoever. 38% had planning at a higher level, 33% had some planning, 19% had received a provincial grant for an age-friendly initiative and only 4% were designated age-friendly by the WHO. Small cities were most likely to have no planning (42%), while all of the large cities examined had some form of planning. 4 of the 5 large cities had received a grant from the provincial government. Probably most concerning of all was that 38% of high intensity cities had no planning. In contrast, every low intensity city had some form of planning. 75% of the low intensity cities and 43% of medium intensity cities benefitted from planning

at a higher governmental level. Lastly, there was a surprising gap between the number of cities that had received grants from the provincial government to conduct age-friendly programs and the number that were officially recognized by the WHO. Regardless of stratification, in all cases the number of cities with provincial grants significantly outweighed the number of WHO designated cities.

Discussion

Between 2013 and 2036 every single Ontario municipality with a population greater than 10,000 is expected to experience an increase in senior dependency. The most severe cases are projected to have more than 150 persons aged 65 and over for every 100 of working age. Although cities of all sizes are expected to witness a projected percent change of senior dependency nearing 100%, it is the small cities that are most vulnerable. By 2036, almost every single small city in Ontario is expected to experience a medium or high intensity of senior dependency. Furthermore, small cities are projected to have the highest old, old-old and very old dependency ratios.

In addition to the stark demographic shift expected in Ontario's small cities, our results show that small cities are also least likely to have started any community level planning for older adults. This could be because smaller communities are less likely to have the capacity or funds to undertake a non-statutory policy exercise. Or they may lack the political will to undertake this exercise. Or, more simply, these communities may be unaware of the magnitude of their ongoing demographic shift. Regardless, these findings demonstrate that the most vulnerable communities in Ontario are also the least prepared to support their older adults through this policy mechanism. If these communities age as forecasted and do not initiate age-friendly policy changes, the quality of life of older adults is likely to decline.

Knowing that the majority of municipalities more at risk for old-age dependency are also more likely to lack age-friendly planning raises the important policy question of how to encourage these

municipalities to support their aging populations. Our study identified that the majority of municipalities with some planning or complete age-friendly plans had applied, and received, a provincial age-friendly grant. The Provincial government in Ontario allocated grant funds for communities and non-governmental organizations working on age-friendly community planning projects in 2015 for a period of two years, with projects ending in March 2017. The total amount invested by the Province was \$1.5 million. Grants given out in 2015 ranged from: up to \$25,000 for municipalities with populations under 20,000, up to \$35,000 for those with 20,000-99,999 residents and up to \$50,000 for those with over 100,000 residents (Ontario Seniors Secretariat, 2013). It is currently unclear whether the Province will reinstitute the age-friendly grant program. At the time of writing, there are no official plans to fund municipal age-friendly planning projects again³. However, as part of ‘Ontario’s Action Plan for Seniors’, the Province did promise to “support [age-friendly community planning] initiatives by showcasing best practices around the province, and introducing a recognition program that promotes and salutes those cities and towns that have developed age-friendly communities initiatives” (Ontario Seniors Secretariat, 2013, p. 12). To date, the Province has produced an Age-Friendly Cities Planning Guide, but no recognition program has been created.

The provincial grants provided between 2015 and 2017 allowed municipalities to undertake the non-statutory age-friendly policy exercise without having to spend a significant portion of their own municipal budget. After decades of downloading, provincial funding is welcome in many municipalities. Provincial funding of this sort has been shown to, at the very least, encourage municipalities to start doing

³ The Province of Ontario is currently offering a new grant program called the Seniors Community Grant Program. However, the program only offers funding to NGOs and is focused on small-scale programming initiatives to support social inclusion (Ministry of Seniors Affairs, 2016b). While this initiative is important, it does not fund city-level planning activities for older adults. The Province also lists the Ontario Trillium Foundation as a potential funding source for seniors’ organizations (Ministry of Seniors Affairs, 2016a). However, the grants are not targeted at cities, as they are only available to NGOs, communities with fewer than 20,000 residents and municipalities who partner with at least two NGOs for the grant application. Furthermore, the Trillium Foundation grants are available for a wide range of initiatives and are not focused on age-friendly community planning – ultimately making them more competitive and less accessible.

work on non-statutory plans (Hall, Grant, & Habib, 2017), such as planning for aging populations. However, at the end of the day an AFC plan is still a non-statutory requirement. Unless that changes, AFC plans will continue to be restricted by available funds and personnel, not to mention the difficulties in raising the political and community will.

The Ontario Provincial government needs to expand its role in order to address the policy gap in small vulnerable communities who did not, or could not, take advantage of the funds. The experience in the province of British Columbia (BC) offers a potential model to overcoming the remaining barrier of reaching the smaller, more vulnerable communities. Since 2005, the BC provincial government has been giving grants to municipalities for age-friendly initiatives. They also have their own AFC recognition program, much like the WHO. In addition, the province has recently launched a program requiring municipalities to plan for older adults and those with disabilities through their statutory planning policies. By following the example of British Columbia and requiring, and supporting, municipalities to plan for older adults, every Ontario municipality would have some form of AFC plan. Not only would individual municipalities be able to plan for a high quality of life for its older residents, a provincial mandate could also foster relationships and collaborations among policymakers across Ontario. This would advance the development, implementation, monitoring and evaluation of age-friendly policies and models.

Such advancements could address the shortcomings of the AFC model that have been highlighted in the literature. Buffel et al. (2012) argue that the AFC model is overly generalized. A one-size fits all political movement that does not engage with larger global forces, produces uneven development and excludes older adults from the discussion of global competitiveness (Buffel et al., 2012). In addition, the model has been criticized for being too prescriptive, and impossible to apply in all contexts all over the world, to such a diverse group of people (Buffel et al., 2012; Lui et al., 2009). Developing, implementing and evaluating context-specific age-friendly policies under one larger provincial framework could

stimulate the evolution of the AFC model and contribute to a more nuanced, robust approach to age-friendly policy development.

Conclusion

Through our analysis of population projections, we found that senior dependency is expected to rise in every Ontario municipality, regardless of size. The very old (85+) dependency ratio is expected to almost triple. This will have a wide range of social, economic and cultural effects, including a significant impact on the provincial healthcare system, as this is the age group most likely to require additional supports. Thus, it is important for municipalities to create conditions to enable people to age-in-community with support from sources other than institutionalized settings like nursing homes. This support has the potential to be offered through the implementation of the AFC model. While Plouffe et al. (2012) emphasize the success in implementing AFC policies in Canada, our empirical analysis shows that the AFC model has seen mixed results in terms of uptake in Ontario. Old-age dependency is likely to impact small to medium sized municipalities more so than larger municipalities. These more vulnerable places are also less likely to have started planning for their older adults. This points to a need to rethink how this policy initiative is being promoted or encouraged. As a starting measure, we recommend looking to the promising practices in the province of British Columbia, where age-friendly principles are mandatory in statutory planning documents, and there is a longer history of grants for age-friendly projects.

This study provided a high-level overview of the number of municipalities in Ontario who are currently planning for an aging population in order to establish a baseline of what local policy-making activities exist. This is a vital first step towards future in-depth qualitative research on the relationship between the lived experience of older adults and the level of services provided. Although there have been

advancements in age-friendly research elsewhere in Canada (Garon et al., 2014; Menec et al., 2015, 2014; Novek & Menec, 2014), at the time of writing there have been no systematic reviews of age-friendly policy uptake in Ontario municipalities and only two empirical evaluative studies of the age-friendly approach in other jurisdictions (Williams-Roberts et al., 2016). Although age-friendly policy ultimately needs to be context-specific, any advances in development, implementation, monitoring and evaluation would be valuable considering the current dearth of research on the topic. The geographic breadth of the aging phenomenon and the WHO AFC model presents an opportunity for a global research community to quickly advance the state of knowledge. Research is needed to better understand the needs of communities, the development of age-friendly policy and to discern whether or not, and where, these policies are being implemented. Furthermore, if policies are being implemented, how are municipal funds being allocated? How much of the municipal budget is going towards the implementation of the plan? How is the plan being evaluated? What are the indicators for the evaluation? Are there demonstrated changes to the local environment? How is success measured? How does the evaluation support the reiteration of the plan?

Once a detailed policy analysis addressing these questions has been produced, the next step is the critically examine the strengths and weaknesses of the model based on its implementation on the ground, and provide recommendations for improving the model or replacing it altogether. Populations are aging in countries all over the world. Aging policies are necessary. Gaining a better understanding of the vulnerability, needs and possibilities for an aging population is time-sensitive. As our analysis of Ontario demonstrates, the change is already very much underway.

References

- Buffel, T., Phillipson, C., & Scharf, T. (2012). Ageing in urban environments: Developing “age-friendly” cities. *Critical Social Policy*, 32(4), 597–617.
- Burdett, R., & Sudjic, D. (Eds.). (2008). *The endless city: The Urban age project by the London School of Economics and Deutsche Bank’s Alfred Herrhausen Society*. London, UK: Phaidon.
- Carlsson, G. (2002). *Catching the bus in old age: Methodological aspects of accessibility assessments in public transport*. Lund, Sweden.
- Chi, G. (2009). Can knowledge improve population forecasts at subcounty levels? *Demography*, 46(2), 405–27.
- Davies, R. (Ed.). (2015). *Economics: Making Sense of the Modern Economy* (4th ed.). London, UK: Profile Books Ltd.
- Davis, H. C. (1995). *Demographic Projection Techniques for Regions and Smaller Areas*. Vancouver: UBC Press.
- Garon, S., Paris, M., Beaulieu, M., Veil, A., & Laliberte, A. (2014). Collaborative Partnership in Age-Friendly Cities: Two Case Studies From Quebec, Canada. *Journal of Aging & Social Policy*, 26(1–2), 73–87.
- Goldstein, J. R., & Stecklov, G. (2002). Long-range population projections made simple. *Population and Development Review*, 28(1), 121–141.
- Hall, N., Grant, J. L., & Habib, M. A. (2017). Planners’ perceptions of why Canadian communities have too many plans. *Planning Practice & Research*.
- Hartt, M. D., & Woudsma, C. G. (2014). How Many and How Do We Know: Assessing Population Projection Methods in Ontario, Canada. *Canadian Planning and Policy*, 23(1), 83–97.
- Hodge, G. (2008). *The Geography of Aging: Preparing Communities for the Surge in Seniors*. McGill-Queen’s University Press.
- Keady, J., Campbell, S., Barnes, H., Ward, R., Li, X., Swarbrick, C., ... Elvish, R. (2012). Neighbourhoods and dementia in the health and social care context: a realist review of the literature and implications for UK policy development. *Reviews in Clinical Gerontology*, 22(2), 150–163.
- Keating, N., & Gaudet, N. (2012). Quality of life of persons with dementia. *The Journal of Nutrition, Health & Aging*, 16(5), 454–456.
- Keilman, N. (2008). European Demographic Forecasts Have Not Become More Accurate Over the Past 25 Years. *Population and Development Review*, 34(March), 137–153.
- Kerr, J., Rosenberg, D., & Frank, L. (2012). The Role of the Built Environment in Healthy Aging: Community Design, Physical Activity, and Health among Older Adults. *Journal of Planning Literature*, 27(1), 43–60.
- Lawton, M. P. (1982). Competence, environmental press, and the adaptation of older people. In P. Windley & T. Byerts (Eds.), *Aging and the Environment: Theoretical Approaches* (pp. 43–60). New York, NY: Springer.
- Lawton, M. P., & Nahemow, L. (1973). Ecology and the aging process. In C. Eisdorfer & M. P. Lawton (Eds.), *Psychology of adult development and aging* (pp. 619–674). Washington, DC: American Psychological Association.
- Lui, C., Everingham, J., Warburton, J., Cuthill, M., & Bartlett, H. (2009). What makes a community age-friendly: A review of international literature. *Australasian Journal on Ageing*, 28(3), 116–121.
- Menec, V. H., Hutton, L., Newall, N., Nowicki, S., Spina, J., & Veselyuk, D. (2015). How “age-friendly” are rural communities and what community characteristics are related to age-friendliness? The case of rural Manitoba, Canada. *Aging & Society*, 35, 203–223.
- Menec, V. H., Novek, S., Veselyuk, D., & McArthur, J. (2014). Lessons Learned From a Canadian

- Province-Wide Age-Friendly Initiative: The Age-Friendly Manitoba Initiative. *Journal of Aging & Social Policy*, 26(1–2), 33–51.
- Ministry of Seniors Affairs. (2016a). Funding and Grants for Seniors' Organizations. Toronto, ON.
- Ministry of Seniors Affairs. (2016b). Seniors Community Grant Program. Toronto, ON.
- Myers, A. M., Cyarto, E. V., & Blanchard, R. (2005). Challenges in quantifying mobility in frail older adults. *European Review of Aging and Physical Activity*, 2(1), 3–21.
- Myers, D. (2001). Demographic Futures as a Guide to Planning. *Journal of the American Planning Association*, 67(4), 383–397.
- Nefs, M., Alves, S., Zasada, I., & Haase, D. (2013). Shrinking cities as retirement cities? Opportunities for shrinking cities as green living environments for older individuals. *Environment and Planning A*, 45(6), 1455–1473.
- Novek, S., & Menec, V. H. (2014). Older adults' perceptions of age-friendly communities in Canada: a photovoice study. *Aging & Society*, 34, 1052–1072.
- Ontario Ministry of Finance. (2013). *Ontario Population Projections Update*. Toronto, ON.
- Ontario Seniors Secretariat. (2013). *Independence, activity and good health: Ontario's action plan for seniors*. Ottawa, ON.
- Openshaw, S., & van der Knapp, G. A. (1983). Small Area Population Forecasting: Some Experience with British Models. *Tijdschrift Voor Economische En Sociale Geografie*, 74(4), 291–304.
- Phillipson, C. (2011). Developing age-friendly communities: New approaches to growing old in urban environments. In R. Settersten & J. Angel (Eds.), *Handbook of Sociology of Aging* (pp. 279–293). New York, NY: Springer.
- Plouffe, L., Garon, S., Brownoff, J., Eve, D., Foucault, M.-L., Lawrence, R., ... Toews, V. (2012). Advancing Age-Friendly Communities in Canada. *Canadian Review of Social Policy*, 68/69, 10–24.
- Plouffe, L., & Kalache, A. (2010). Towards Global Age-Friendly Cities: Determining Urban Features that Promote Active Aging. *Journal of Urban Health*, 87(5), 733–739.
- Rayer, S. (2008). Population Forecast Errors: A Primer for Planners. *Journal of Planning Education and Research*, 27(4), 417–430.
- Rayer, S., & Smith, S. K. (2010). Factors Affecting the Accuracy of Subcounty Population Forecasts. *Journal of Planning Education and Research*, 30(2), 147–161.
- Scheidt, R. J., & Windley, P. G. (2006). Environmental gerontology: Progress in the post-Lawton era. In J. E. Birren, K. W. Schaie, R. P. Abeles, M. Gatz, & T. A. Salthouse (Eds.), *Handbook of Psychology of Aging* (pp. 105–125). Boston, MA: Elsevier Academic Press.
- Seasons, M. (2003). Indicators and core area planning: applications in Canada's mid-sized cities. *Planning Practice and Research*, 18(1), 63–80.
- Smith, S. K., & Shahidullah, M. (1995). An evaluation of population projection errors for census tracts. *Journal of the American Statistical Association*, 90(429), 64–71. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/12155398>
- Smith, S. K., & Tayman, J. (2003). An Evaluation of Population Projections by Age. *Demography*, 40(4), 741–757. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/14686140>
- Smith, S. K., Tayman, J., & Swanson, D. A. (2001). *State and local population projections: methodology and analysis*. New York: Kluwer Academic/Plenum Publishers.
- Spina, J., & Menec, V. H. (2015). What Community Characteristics Help or Hinder Rural Communities in Becoming Age-Friendly? Perspectives From a Canadian Prairie Province. *Journal of Applied Gerontology*, 34(4), 444–464.
- Statistics Canada. (2015). *Canada's population estimates: Age and sex, July 1, 2015*. The Daily,

- September 29. Ottawa, ON. Retrieved from <http://www.statcan.gc.ca/daily-quotidien/150929/dq150929b-eng.htm>
- Statistics Canada. (2016). Census Division Definition. In *Dictionary, Census of the Population*. Ottawa, ON.
- Swanson, D. A., & Tayman, J. (1995). Between a rock and a hard place: The evaluation of demographic forecasts. *Population Research and Policy Review*, 14(2), 233–249.
- Thomas, B. W. H., & Blanchard, J. M. (2009). Moving Beyond Place: Aging in Community. *Journal of the American Society on Aging*, 33(2), 12–17.
- Townshend, I., & Walker, R. (2015). Life Course and Lifestyle Changes: Urban Change through the Lens of Demography. In P. Fillion, M. Moos, T. Vinodrai, & R. Walker (Eds.), *Canadian Cities in Transition: Perspectives for an Urban Age* (5th ed.). Don Mills: Oxford University Press.
- Vaupel, J. W., Carey, J. R., & Christensen, K. (2003). Aging. It's never too late. *Science*, 301(5640), 1679–1681.
- Wahl, H.-W., & Oswald, F. (2010). Environmental perspectives on aging. In D. Dannefer & C. Phillipson (Eds.), *International Handbook of Social Gerontology* (pp. 111–124). London, UK: Sage.
- Wilkinson, R., & Marmot, M. (2003). *Social determinants of health: the solid facts* (2nd ed.). Copenhagen, Denmark.
- Williams-Roberts, H., Jeffery, B., Johnson, S., & Muhajarine, N. (2016). The Effectiveness of Healthy Community Approaches on Positive Health Outcomes in Canada and the United States. *Social Sciences*, 5(1).
- Wilson, T. (2014). New Evaluations of Simple Models for Small Area Population Forecasts. *Population, Space and Place*.
- Wilson, T., & Rees, P. (2005). Recent developments in population projection methodology: a review. *Population, Space and Place*, 11(5), 337–360.
- Wilson, T., & Rowe, F. (2011). The Forecast Accuracy of Local Government Area Population Projections: A Case Study of Queensland. *Australasian Journal of Regional Studies*, 17(2), 204.
- World Health Organization. (2017). Towards an Age-Friendly World. Retrieved February 14, 2017, from <http://www.who.int/ageing/age-friendly-world/en/>